

STATE OF NEW YORK  
SUPREME COURT : COUNTY OF STEUBEN

In the Matter of the Application of the SIERRA CLUB;  
PEOPLE FOR A HEALTHY ENVIRONMENT, INC.;  
COALITION TO PROTECT NEW YORK; JOHN MARVIN;  
THERESE FINNERAN; MICHAEL FINNERAN;  
VIRGINIA HAUFF; and JEAN WOSINSKI,

Petitioners,

For a Judgment Pursuant to Article 78 of the Civil Practice Laws  
and Rules

-against-

THE VILLAGE OF PAINTED POST; PAINTED POST  
DEVELOPMENT, LLC; SWEPI, LP; and  
WELLSBORO AND CORNING RAILROAD, LLC,

Respondents.

AFFIDAVIT IN OPPOSITION  
TO RESPONDENTS' MOTION  
TO DISMISS AND/OR FOR  
SUMMARY JUDGMENT

Index No. 2012-0810CV

Justice Alex R. Renzi

State of New York,  
County of Chemung, ss.:

RUTH YOUNG, being duly sworn, deposes and says:

1. I am the president of People for Healthy Environment, Inc. (PHE).
2. PHE is a New York State not-for-profit corporation, organized to advocate for the strengthening and effective enforcement of environmental and land use laws and regulations, and to assist communities, groups and individuals whose land, air, water, health, and quality of life may be subject to degradation by resource extraction activities. Protection of our local drinking water supplies is a key focus of PHE activities.
3. The membership of PHE is centered in the Elmira, New York area. Of the 60 members of the organization, 14 live in the City of Elmira, 15 live in the Town of Horseheads, two

live in the Town of Big Flats, and two live in the City of Corning. The other members live in surrounding communities.

4. The majority of our members live immediately downriver from the Corning aquifer and damage to the Corning aquifer may damage our drinking water supplies.

5. If our drinking water supplies were to be diminished or contaminated, it could affect our health and make it difficult for us to continue living in our homes. It could also reduce the value of our property. Our neighbors and residents of the entire area immediately downriver from the Corning aquifer could experience the same effects, which could have a negative effect on the overall economy of our area.

6. The drinking water for many of our members is supplied by three municipal water systems: the Elmira Water Board, the Village of Horseheads Water Department, and the Town of Big Flats Water Department. Pipes from these municipal water systems run directly to the houses of most of our members. Several of our members have private wells.

7. The water for the municipal water systems supplying our members is supplied by the Chemung River and by wells drawing on the groundwater in the Elmira-Horseheads-BigFlats aquifer, which is immediately downriver from the Corning aquifer.

8. Like the Corning aquifer, the Elmira-Horseheads-Big Flats Aquifer is a primary aquifer, one of only 18 in New York State. New York's primary aquifers are shown in Fig. 2.1 of the DEC's Draft Supplemental Generic Environmental Impact Statement (RDSGEIS) on hydraulic fracturing, page 2-21, attached hereto as Exhibit A. Primary aquifers have been designated by the NYS Department of Health to "enhance regulatory protection in areas where groundwater resources are most productive and most vulnerable." See the DEC website, Primary & Principal Aquifers, <http://www.dec.ny.gov/lands/36119.html>.

9. In recognition of the need for special protection of primary aquifers, the RDSGEIS provides that gas drilling will be prohibited within primary aquifers and within 500 feet of their boundaries. Why then should gas drilling companies be allowed to withdraw water from New York's primary aquifers and export it to Pennsylvania for the consumptive use of gas drilling?

10. According to the information provided on its website, the Elmira Water Board (EWB) delivers over 7 million gallons of water every day to more than 65,000 people in the City of Elmira, the Village of Elmira Heights, and portions of the towns of Elmira, Horseheads and Southport. Since 1889, the website states, the primary source of water for the EWB has been the Chemung River. In 2011 63.4% of the system's raw water came from the river. Wellfields Foster Island #40 and 41 contributed 10.5% and Hudson Street #1A and 2, contributed 25.8% of EWB's 2011's source water. The website also states that all raw, untreated water from the river, wells, and reservoir are blended before distribution. See <http://elmirawaterboard.org/>. EWB's 2011 Drinking Water report states that the well fields draw on the Elmira-Horseheads-Big Flats Aquifer (EHBF Aquifer). See Exhibit B.

11. As in the case of the Corning Aquifer, located immediately upriver, the Chemung River and the EHBF Aquifer are closely connected. The close connection of the Chemung River and the EHBF Aquifer is addressed in the 2011 drinking water quality reports of both the Town of Big Flats and the Village of Horseheads water systems.

12. The Town of Big Flats 2011 water quality report, attached hereto as Exhibit C, states that the water sources for the Big Flats water system are two 40-foot-deep wells and a 50-ft deep well. The system serves about 3,800 residential customers, the mall, four hotels and several shopping centers, through approximately 1500 service connections. The report notes that the source water assessment conducted by the NYS Department of Health (DOH) has rated the Big Flats wells as having a high susceptibility to microbials, nitrates, industrial solvents, metals and

other industrial contaminants, and that this is due in part because “the wells draw from an unconfined aquifer with high hydraulic conductivity.”

13. The Village of Horseheads 2011 water quality report, attached hereto as Exhibit D, states that the water source for the Village of Horseheads water system is ground water drawn from two fifty foot deep wells on Mill Street and a 70 foot deep well on Old Ithaca Road. Following the flooding in 2011, the Report states, the Old Ithaca Road well was re-classified from a ground water source to groundwater under the influence of surface water. The Horseheads water system serves 15,000 people through 3,612 service connections. The total water produced in 2011 was 714 million gallons. The daily average of water pumped into the system is 1.9 million gallons.

14. The report notes that the NYS DOH has completed a source water assessment for the Horseheads system, based on available information, and that the source water assessment rated the Horseheads wells as having a high to very high susceptibility to microbials, nitrates, industrial solvents, and other industrial contaminants. The report states that the rating was due in part to the fact that “the wells draw from an unconfined aquifer that yields or pumps greater than 100 gpm and doesn’t provide adequate protection from potential contamination.”

15. The report discusses the hardness of the water provided by the Horseheads system. “An often-asked question about our water system is how hard is our water. In chemical terms our waters average hardness is 210 mg/L or 12 gr/Gallon as CaCO<sub>3</sub>, total dissolved solids is 150 mg/L, and Iron content is less than .050 mg/L. This means our water is very hard.”

16. One fact that concerns us in this case is the fact that the municipal water sale by the Village of Painted Post to SWEPI did not go through the same approval process by the SRBC that other water withdrawals in this area have gone through. Consequently, our members did not have an opportunity to offer comments on the merits of this withdrawal even though it is a withdrawal that could have significant impacts on our drinking water supplies and the economy of this region,

particularly if similar withdrawals are allowed with a similar lack of opportunity for public comment.

17. From our perspective, both the content of the approval issued by the SRBC to SWEPI to take water from the Painted Post municipal water system (the “Painted Post approval”) and the process followed by the SRBC in issuing the approval are quite mysterious.

18. It is particularly curious that the Painted Post approval seems to have been issued during a time when the SRBC has stated that no new water withdrawal permits for the consumptive use of gas drilling are being issued in New York (two renewal permits were issued in June 2012).

19. A comparison of the SRBC’s process for issuing the Painted Post approval to its process for issuing the approval to SWEPI to draw water from the Chemung River at Big Flats (the “Big Flats approval”) that was renewed in June 2012, shows many differences. The process for issuing the Big Flats approval was very public, the process for issuing the Painted Post approval was a complete secret.

20. The Big Flats approval was shown on the agenda for both the May 10, 2012, and the June 7, 2012, SRBC meetings as confirmed by the press releases for those meetings posted at <http://www.srbc.net/newsroom/NewsRelease.aspx?NewsReleaseID=84> and <http://www.srbc.net/newsroom/NewsRelease.aspx?NewsReleaseID=88>.

21. It was easy to comment on the Big Flats approval. The website that shows the agenda for each upcoming meeting, <http://www.srbc.net/pubinfo/projectapplications.htm>, contains an “Add Comment” link to submit written comments on specific project applications. Because the Big Flats approval was on the agenda, it was listed as a specific project application for which comments could be made.

22. In contrast to the Big Flats approval process, no notice that the Painted Post approval was pending was posted on the SRBC website, and there was no mechanism for commenting on the Painted Post approval on the SRBC website.

23. Another significant difference between the two approvals is demonstrated by the SRBC's actions during the low flow conditions we experienced in the Chemung River watershed this summer. In recognition of these low flow conditions, the SRBC suspended 37 permits in the Susquehanna River Basin on June 28, 2012, including two in the Chemung River, one of which was the Big Flats approval. See SRBC Press Release, "37 Water Withdrawals for Natural Gas Drilling and Other Uses Suspended to Protect Streams," June 28, 2012, which stated, "The Susquehanna River Basin Commission (SRBC) today announced that 37 separate water withdrawals approved by SRBC are suspended due to localized streamflow levels dropping throughout the Susquehanna basin." . SWEPI's Big Flats approval was first on the list of suspended withdrawals, <http://www.srbc.net/newsroom/NewsRelease.aspx?NewsReleaseID=89>. On July 16, 2012, the SRBC issued a second press release expanding the list of withdrawals suspended due to low streamflow levels to 64. Again, SWEPI's Big Flats were first on the list. <http://www.srbc.net/newsroom/NewsRelease.aspx?NewsReleaseID=90>.

24. In contrast, during the time the Big Flats withdrawals were suspended, SWEPI's Painted Post water withdrawals began at the end of August.

25. A substantial amount of information is available on the SRBC website for the Big Flats approval. None is available on the website for the Painted Post approval.

26. Unlike SWEPI's Big Flats approval, SWEPI's Painted Post approval is not referenced on the SRBC's Water Resource Project Location Map, <http://www.srbc.net/wrp/Map.aspx?ID=8138>. If one goes to the SRBC water resource portal project search webpage, <http://srbc.net/wrp/Search.aspx>, and searches for SWEPI LP projects, the

Big Flats approval comes up with a substantial amount of information about the approval. The Painted Post approval does not come up in such a search.

27. The following information about the Big Flats approval is posted at <http://srbc.net/wrp/Details.aspx?ID=8119&num=2011-140> and there is a link at the bottom of the page to view a PDF of the actual approval issued:

<b>Approval Number:</b>	20120616
<b>Pending Number:</b>	2011-140
<b>Type:</b>	Surface Water
<b>Approval Date:</b>	06/07/2012
<b>Expiration Date:</b>	06/06/2016
<b>Project Sponsor:</b>	SWEPI LP
<b>Facility Name:</b>	Chemung River - Big Flats
<b>NAICS Description:</b>	211111 - Crude Petroleum and Natural Gas Extraction
<b>Municipality:</b>	Big Flats Town
<b>County:</b>	Chemung
<b>State:</b>	NY
<b>Application Status:</b>	Approved
<b>Project Status:</b>	Active

28. No equivalent information is available for the Painted Post approval on the SRBC website. The only indication on the SRBC website that an approval has been issued for the Painted Post withdrawals is that the Village of Painted Post shows on the list of approved water sources for SWEPI. But there is no docket number, no date for the issuance of the approval, no statement of the amounts approved and opportunity to view the actual approval issued.

29. We urge that sufficient steps be taken to ensure that the Chemung River remains a source of clean and healthy drinking water. It concerns us to see that the Susquehanna River was designated America's "Most Endangered" River by American Rivers in 2011. As the withdrawals at issue in this case show, the watershed of the Chemung River itself faces greater pressure than ever before, with hydrofracturing contributing to the threats to both its water quality and quantity. New York State must make sure that our waters are protected.

I have personal knowledge of all facts set out in this affidavit.

Ruth J. Young

Sworn to before me this 18th day of December 2012.

Rachel Treichler

Notary Public, State of New York

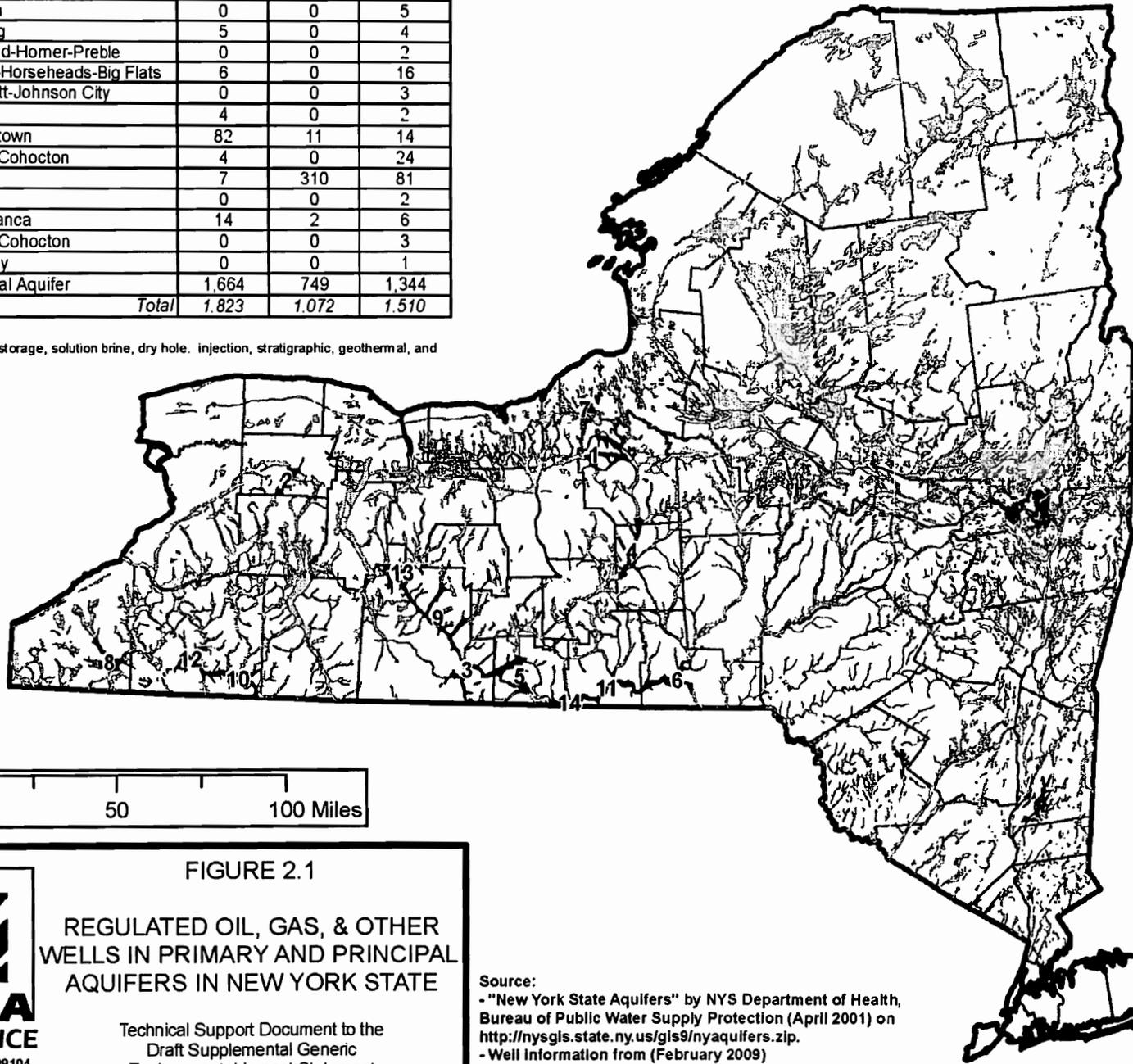
**RACHEL TREICHLER**  
Notary Public, State of New York  
No. 02TR5058999  
Qualified in Steuben County  
Commission expires 04/22/2014



Map No.	Aquifer Name	Number of Wells Within Mapped Aquifer Boundary		
		Gas Wells	Oil Wells	Other Wells*
1	Baldwinsville	37	0	3
2	Batavia	0	0	5
3	Corning	5	0	4
4	Cortland-Homer-Preble	0	0	2
5	Elmira-Horseheads-Big Flats	6	0	16
6	Endicott-Johnson City	0	0	3
7	Fulton	4	0	2
8	Jamestown	82	11	14
9	Lower Cohocton	4	0	24
10	Olean	7	310	81
11	Owego	0	0	2
12	Salamanca	14	2	6
13	Upper Cohocton	0	0	3
14	Waverly	0	0	1
	Principal Aquifer	1,664	749	1,344
	<i>Total</i>	<i>1,823</i>	<i>1,072</i>	<i>1,510</i>

Notes:

\* - Other wells include storage, solution brine, dry hole, injection, stratigraphic, geothermal, and not listed well types.



**Legend**

-  Primary Aquifer
-  Principal Aquifer Greater Than 1 Sq. Mi.
-  Combined Utica and Marcellus Shales in New York State



FIGURE 2.1

REGULATED OIL, GAS, & OTHER WELLS IN PRIMARY AND PRINCIPAL AQUIFERS IN NEW YORK STATE

Technical Support Document to the Draft Supplemental Generic Environmental Impact Statement

Source:  
 - "New York State Aquifers" by NYS Department of Health, Bureau of Public Water Supply Protection (April 2001) on <http://nysgis.state.ny.us/gis9/nyaquifers.zip>.  
 - Well Information from (February 2009) <http://www.dec.ny.gov/energy/1603.html>

**Exhibit B**



**Annual Drinking Water Quality Report**  
2011  
(Issued February 2012)

PWSID #NY0701008

Dear Elmira Water Board Customer:

This publication contains a summary of the quality of the water provided to you during the past year. Federal and state requirements set the measuring standards by which we are evaluated. In 2011, the EWB met or exceeded all federal and state requirements.

By reading this report you will learn where your water comes from, what it contains, and how it compares to state standards. Information is also provided on our capital improvement projects for 2011.

In the right-hand column, you will find the source water assessment information prepared by the New York State Department of Health. The importance of maintaining a safe water source free of pollution is explained.

We are proud to report that your tap water meets all water quality standards established by federal and state regulations. The Elmira Water Board's lab conducts daily sampling and testing to ensure that the water delivered to your home is safe. Outside laboratories are also used to test for various contaminants. The effectiveness of our treatment process is confirmed in the testing results, where no violations were found.

The task of being good stewards of our water must belong to every citizen in our community. Nothing less would be acceptable for our children and those who will inherit the results of our efforts.

The staff and management of the Elmira Water Board remain committed to doing our best to maintain high water quality for you and your family. We look forward to serving your water needs in 2012.

EWB Statistics	
Average Daily System Use	5.5 Million Gallons
Total Water Produced	2,020 Billion Gallons
Population Served	65 Thousand
Unaccounted For Water	14.3%
Accounts	17,453
Average Annual Residential Use	55,352 Gallons
Average Annual Residential Bill	\$204.83
Miles Of Water Main	225 Miles
Number Of Hydrants	1,247

Elmira Water Board Directory	
Mark D. LaDouce, General Manager	733-9179
Main Office	
Monday through Friday 9:00 AM to 4:00 PM customer service & billing information	733-9179
Danny Gray, Chief Water Treatment Operator	732-2277
Filtration Plant	
24/7 water quality questions & to report an emergency	732-2277
Elmira Water Board Website	<a href="http://www.elmirawaterboard.org">www.elmirawaterboard.org</a>
Public Elmira Water Board Meetings 1 Fountain Drive, Elmira, NY Call Main Office for dates and times	733-9179
Other Important Water Numbers	
Chemung County Health Department To answer water questions	737-2019
Chemung County Health Department Website (click on the environmental tab to view the drinking water page)	<a href="http://www.chemungcountyhealth.org">www.chemungcountyhealth.org</a>
Environmental Protection Agency Safe Drinking Water Hotline	1-800-426-4791

**INFORMATION ON CONTAMINANTS AND THEIR POTENTIAL HEALTH EFFECTS**  
*Important Educational Information if You Are Immunocompromised or Have an Infant*

Although our drinking water meets or exceeds state and federal regulations, some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons are especially at risk. Such persons can be, for example: persons with cancer undergoing chemotherapy; persons who have undergone organ transplants; persons with HIV/AIDS or other immune system disorders; the elderly and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA)/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791). Please call our office if you have questions.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791). As a precautionary measure, all customers are urged to flush their cold water taps each morning 30 seconds to 2 minutes to remove contaminants that may come from house water lines.

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Filtration and disinfection are the best methods for guarding against microbiological contaminants, although a 100% removal or inactivation cannot be guaranteed. We at the Elmira Water Board have installed adequate filtration and disinfecting equipment for proper and effective treatment of our water.

**Drinking Water Sources**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial, inorganic, pesticides and herbicides, organic, chemical, and radioactive.

In order to ensure that tap water is safe to drink, the state and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the EPA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Since 1889 the primary source of water for the EWB has been the Chemung River. In 2011, 63.4% of our raw water came from the river. Wellfields, Foster Island #40 & 41 (the use of well #42 was discontinued in 2006) contributed 10.5% and Hudson Street #1A & 2, contributed 25.8% of 2011's source water. The first EWB water source (c. 1872) was the Hoffman Reservoir, which is now used on a standby basis and provided 3% of our raw water in 2011.

Instead of using any one source alone, all raw (untreated) water from the river, wells, and reservoir are blended to provide a better water product. By utilizing modern technology in our treatment and disinfection process, our Filtration Plant consistently exceeds state standards and assures a high margin of safety.

**2011 WATER SYSTEM IMPROVEMENTS**

- ★ Replaced 4,800 ft. of older small diameter cast iron water main
- ★ Replace/upgrade lab equipment & instrumentation
- ★ Purchased 1 pickup truck
- ★ Repair intake sites in Chemung River
- ★ Upgrade of Man Office lobby & customer area
- ★ Network upgrades of software & equipment
- ★ Purchased Loader Backhoe, air compressor, & road saw for water main replacement

**2012 WATER SYSTEM PLANNED IMPROVEMENTS**

- ★ Replace 6,000 ft. of small diameter cast iron water main
- ★ Replace turbidity meters at Pump Station & Filter Plant
- ★ Upgrade of Man Office staff areas
- ★ Upgrade financial software package and routine computer replacement
- ★ Water meter replacement project
- ★ Continued fiduciary diligence by preserving the EWB's fiscal health

**Source Water Assessment Summary**  
Elmira Water Board #NY0701008  
January 19, 2015

The NYS DOH has completed a source water assessment for the Elmira Water Board, based on available information. Possible and actual threats to multiple drinking water sources were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily those contaminants can move about. The susceptibility rating is an estimate of the potential for contamination of the source water; it does not mean that the water delivered to consumers is, or will become, contaminated. See page 2 of this report for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

The assessment found an elevated susceptibility to contamination for the surface water sources, the Chemung River and Hoffman Reservoir. The amount of agricultural lands in the assessment area results in elevated potential for pesticides and herbicides contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for pesticides). There are no noteworthy contamination threats associated with other discrete contamination sources. Finally, it should be noted that relatively high flow velocities make river and reservoir drinking water supplies highly sensitive to existing and new sources of microbial contamination.

The assessment of the five active wells found them to have a medium-high to high susceptibility to microbial, nitrate, industrial solvents, and other industrial contaminants. These ratings are due primarily to the close proximity of industrial/commercial facilities that discharge wastewater into the environment and low intensity residential activities in the assessment area. Please note that water from all the sources is blended and treated at the filtration plant to provide disinfection and to remove contaminants. There are also wellhead protection rules in place for the wells, and watershed protection rules for the Hoffman Reservoir. These rules give legal authority to forbid activities and discharges that could cause gross contamination in these sources.

**Why Water Conservation is Part of "Going Green"**

Only 3% of the world's water is fresh water, and of this 2/3 is stored in ice caps and glaciers. That leaves only 1% of the world's water available for drinking. "Going green" means protecting our water against the constant threat of pollution and conserving our usage. **Save Energy:**

Reduce usage of hot water, washing machine, dishwasher, etc.; if possible, replace existing high energy consuming appliances. **Save the Environment:**

Landscape with plants that require little water; water the lawn less frequently (before dawn/after sunset); try catching rain water for outdoor usage. Look for nontoxic alternatives for household products. Avoid using garbage disposals (try to compost food waste); putting food waste, oils, and grease down the drain burdens water treatment plants and affects aquatic life and water quality downstream. **Save Money:**

Water conservation will lower your water bill, sewer tax, and energy costs. We are fortunate to have an abundant local water supply; future generations will judge us on how we protected and preserved it.

*Water Chemistry Definitions, Terms, & Abbreviations*

**Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

"< " = less than

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

"N/A" = not applicable. Not related to the matter described.

**Nephelometric Turbidity Unit (NTU):** Measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Parts per million (ppm):** Corresponds to one part of liquid in one million parts of liquid.

**Parts per billion (ppb):** Corresponds to one part of liquid in one billion parts of liquid.

**pH units:** A measure of acidity or alkalinity of the water.

**Picowatts per liter (pCi/L):** A measure of the radioactivity in water.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Detected Substances**

In 2011, we tested for over 200 contaminants. The table that follows shows the substances that were detected. None of these contaminants exceeded the regulated levels established by the EPA and New York State.

To obtain more information on the details of the non-detected contaminants, please visit our website [www.elmirawaterboard.org](http://www.elmirawaterboard.org) or your Sweets Memorial Public Library Downtown Elmira Branch for a copy of the Recent Analytical Results and Sample Plan for the distribution system.

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Units of Measure	MCLG	Regulatory Limit (MCL)	Likely Source of Contamination
<b>Inorganic Contaminants:</b>							
Barium	no	4/25/2011	0.08	ppm	2	2	Erosion of natural deposits
Chloride	no	In 2011: daily	High .90 Low .62 Average .76	ppm	n/a	250	Naturally occurring; use of road salt; seasonal salt brine discharge by natural gas storage facilities.
Lead	no	June 2011	*90th % 3.8 High 7.8 Low <.5	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of deposits
*90th Percentile: Out of 30 samples tested 90% of the samples had a lead concentration of 3.8 ppb or less with 0 samples exceeding the 15 ppb action level (AL)							
Copper	no	June 2011	*90th % .05 High .12 Low .004	ppm	1.3	AL=1.3	Corrosion of household plumbing systems
*90th Percentile: Out of 30 samples tested 90% of the samples had a copper concentration of .05 ppm or less with 0 samples exceeding the 1.3 ppm action level (AL)							
Fluoride	no	In 2011: daily	High .89 Low .54 Average .70	ppm	n/a	2.2	Water additive which promotes strong teeth
Nitrates	no	4/25/2011	0.62	ppm	10	10	Runoff from fertilizer use
Sodium	no	8/25/2011	40	ppm	n/a	no designated limits	Naturally occurring; use of road salt
Sodium: Water containing more than 20 ppm of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets. Sodium in excess could cause problems for individuals with hypertension.							
Nickel	no	4/25/2011	1.4	ppb	n/a	n/a	Discharge from factories; corrosion of plumbing fixtures
<b>Organic Contaminants: Volatile Organic Carbons</b>							
MTBE (Methyl tert-Butyl Ether)	no	In 2011: 4/25, 8/25, 11/19	1 <0.5 <0.5	ppb	n/a	5	Releases from gasoline storage tanks; atmospheric deposition
<b>Radioactive Contaminants:</b>							
Gross Alpha	no	7/1/2010	0.65	pCi/L	0	15	Erosion of natural deposits
Radium 226	no	7/1/2010	0.23	pCi/L	0	226 & 228 combined has an MCL of 5	Erosion of natural deposits
Radium 228	no	7/1/2010	0.0	pCi/L	0		
<i>New York State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. For this reason some of our data, though representative, is more than one year old.</i>							
<b>Disinfection By-Products:</b>							
Total Organic Carbon (TOC) Source	no	In 2011: monthly	High 2.7 Low 1.3 Average 2.0	ppm	n/a	n/a	Naturally occurring organic materials from decaying leaves & plants
Total Organic Carbon (TOC) Treated	no	In 2011: monthly	High 1.7 Low 1 Average 1.4	ppm	TT	TT	Source same as above, treated samples measure the effectiveness of our water treatment process
Total Trihalomethane (TTHM) *RAA (Running Annual Average): average of last 4 quarters	no	In 2011 3/1, 6/1, 8/28, 11/15	Quarterly Individual Samples High 96 Low 16	ppb	n/a	*RAA Quarterly Average 80	By-product of drinking water chlorination needed to kill harmful organisms; formed when source water contains large amounts of organic matter.
Halooacetic Acids (HAA) *RAA (Running Annual Average): average of last 4 quarters	no	In 2011: 3/1, 6/1, 8/28, 11/15	Quarterly Individual Samples High 36 Low 9	ppb	n/a	*RAA Quarterly Average 80	By-product of drinking water chlorination needed to kill harmful organisms
<b>Microbiological Contaminants:</b>							
*Turbidity after purification plant	no	In 2011: every 4 hours	100% of 2,190 results < 0.3	ntu	n/a	TT=0.3	Soil runoff
*Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.							
Turbidity at customer tap	no	In 2011: daily	High .69 Low .04 Average .10	ntu	n/a	TT=5	Suspended particles in water from piping
Chlorine	no	In 2011: daily	High 1.16 Low .24 Average .76	ppm	MRDLG 4.0	MRDL 4.0	Level of disinfectant necessary for control of microbial contaminants
<b>Corrosion Control Treatment:</b>							
Orthophosphate	no	In 2011: daily	High 1.26 Low .95 Average 1.08	ppm	n/a	TT=0.5-5.0	Water additive for corrosion control
pH	no	In 2011: daily	High 8.0 Low 7.7 Average 7.8	pH units	n/a	TT=>7.4	A pH value below 7 can release metals like lead from household plumbing, while a level above 7 reduces corrosion
Alkalinity	no	In 2011: daily	High 128 Low 94 Average 112	ppm	n/a	TT=>39	Water additive for corrosion control
<b>In 2011, over 3,000 total water samples were taken with no violations found!</b>							

**Exhibit C**

# Annual Drinking Water Quality Report for 2011

Town of Big Flats Water Districts 2 and 3

Public Water Supply ID# 0701011 and 0701006

March 2012

To comply with State regulations, the Town of Big Flats is issuing its annual report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or concerning your drinking water, please contact John Dufresne, Water Systems Supervisor at 607-562-8443, extension 212. Please feel free to attend our Water Board meetings. They are held the 4<sup>th</sup> Wednesday of the month at 7pm at the Town Hall.

## Where does our water come from?

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water sources are two 40-foot-deep wells and a 50-ft deep well. Our system is interconnected so all 3 wells serve Districts 2 & 3 in some capacity. We maintain the proper level of disinfection against microbial contaminants as determined by our chlorine residual sample results that fall within the acceptable range of 0.20 mg/L to .92 mg/L. Districts 2 & 3 serve about 3800 people through 1100 residential service connections. During 2011 we limited use of our District 2 wells.

Due to flooding experienced in September 2011 the Carpenter Road wells were shut down as a precautionary measure. Testing of the untreated well water after the flood event showed the presence of e. coli, so the wells were not used again until the pollution abated. We have upgraded our treatment controls to meet new State disinfection standards that protect against any bacteria and viruses that might wash into the water table during exceptional rains.

## Facts and Figures

Our water system serves about 3,800 residential customers, the mall, four hotels and several shopping centers, through approximately 1500 service connections. Our three wells produced 190.92 million gallons of water in 2011. We pumped an average of 523,307 gallons of water into our system everyday. On our highest single day we pumped a total of 967,000 gallons into the system.

Approximately 89% of the water pumped from these three wells was billed directly to customers. This information is based on the 2011 customer billing records. Another 2% was identified as being used for street sweeping, tank emptying and repaired leaks. The balance, 9%, was used for fire fighting purposes, hydrant flushing, distribution system leaks, including main breaks and service leaks and unauthorized use. We repaired five leaks in the system in 2011.

The average residence uses about 15,000 gallons each billing quarter. This results in an annual bill of \$148 for 60,000 gallons.

The water department's two storage tanks were sandblasted and repainted, one at a time, in 2011 as part of our long term maintenance schedule.

Improvements to the system are always on the table. Currently we are looking at a SCADA system.

## Source Water Assessment Program (SWAP)

The NYS DOH has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. See section "Are there contaminants in our drinking water?" for a list of the

contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

As mentioned before, our water is derived from 3 drilled wells. The source water assessment has rated these wells as having a high susceptibility to microbials, nitrates, industrial solvents, metals and other industrial contaminants. These ratings are due primarily to the close proximity of a permitted discharge facility (industrial/commercial facilities that discharge wastewater into the environment and are regulated by the state and/or federal government); a toxic chemical release facility; and agricultural land in relation to the wells. In addition, the wells draw from an unconfined aquifer with high hydraulic conductivity. Please note that, while the source water assessment rates our wells as being susceptible to microbials, our water is disinfected to ensure that the finished water delivered into your home meets the New York State drinking water standards for microbial contamination. A copy of this assessment, including a map of the assessment area, can be obtained by contacting us.

### Are there contaminants in our drinking water?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Chemung County Health Department at 737-2019.

### Contaminants Detected in 2011 (or latest test)

#### Definitions used in the table:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Not Detected (N/D): The contaminant was not detected in the laboratory test.

Not Applicable (N/A):

Picocuries per liter (pCi/L): A measure of radioactivity in water.

#### Distribution System

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measure -ment	MCLG	Regulatory Limit MCL (AL)	Likely Source of Contamination
Trihalomethanes	N	8/10 2 Samples	Avg 19.2 Range 17.5 – 20.9	ug/L	N/A	80	By-product of drinking water chlorination
Haloacetic Acids	N	8/10 2 Samples	Avg 5.3 Range 3.7 – 6.9	ug/L	N/A	60	By-product of drinking water chlorination
Lead 20 samples Note 1	N	7/10	90 <sup>th</sup> %=5 Range 0.8 – 9.3	ug/L	0	15 (AL)	Corrosion of household plumbing
Copper 20 Samples Note 1	N	7/10	90 <sup>th</sup> % = .14 Range .04 - .17	mg/L	1.3	1.3 (AL)	Corrosion of household plumbing

**Note 1:** The 90<sup>th</sup> Percentile (90<sup>th</sup> %) means that 90% of the results were less than or equal to the number reported. No samples exceeded the action level for lead or copper. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of

materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

### Consumer Square Well

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL (AL)	Likely Source of Contamination
Arsenic	N	3/09	0.7	ug/L	N/A	10	Naturally occurring
Barium	N	3/09	0.12	Mg/L	2	2	Erosion of natural deposits.
Flouride	N	3/09	0.31	Mg/L	2.2	2.2	Naturally occurring
Nitrate <i>1 sample</i>	N	1/11	0.91	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage;
Sodium	N	3/09	61	mg/L	N/A	Note 2	Naturally occurring; Road salt; Water softeners; Animal waste.
1,1,1-Trichloroethane	N	2011- Qtrly 4 Samples	Average 1.13 Range 0.90 – 1.4	ug/L	5	5	Industrial solvent used for cleaning & degreasing.

**Note 2:** Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

### District 2 Wells

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL (AL)	Likely Source of Contamination
Barium 2 Samples	N	6/11	Average 0.138 Range 0.122 – 0.154	mg/L	2	2	Erosion of natural deposits.
Cyanide 3 Samples <i>Note 3</i>	N	6/11	Average 0.096 ND – 0.269	mg/l	0.2	0.2	Anticaking agent in road salts and deicing products; fumigant for burrowing animals and yellow jackets.
Nitrate <i>Note 4</i>	N	2011 8 samples	Average 5.88 Range 4.48 – 7.57	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage
Radium 228	N	8 samples in 2008	Average .5 Range .06-1.7	PCi/L	0	5 (Total of all radium forms)	Naturally occurring
Sodium 2 samples	N	8/11	39.25 Range 34.8 – 43.7	mg/L	N/A	Note 5	Naturally occurring; Road salt; Water softeners; Animal waste.

**Note 3:** WD2 operates two wells in an isolated agricultural area. In June 2011, cyanide was detected in one well, but not in the neighboring well. A check sample collected immediately after we received the initial report showed no trace of cyanide. The average of the samples was less than the maximum allowed by the State, so a violation did not occur. Because results were irregular, we suspect a problem with the sampling or measurement procedure.

**Note 4:** Because water from out Carpenter Road wells sometimes contains nitrate at levels above one-half of the maximum allowed, we must present the following information. Note that Big Flats has not exceeded the maximum level allowed for nitrate since 1995.

Nitrate in drinking water at levels above 10 mg/l is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from you health care provider.

**Note 5:** Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

## **What does this information mean?**

As you can see by the table our system had no violations in 2011. We have learned through our testing that other contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

## **Is our water system meeting other rules that govern operations?**

Our system was in compliance with all state regulations.

## **Do I need to take special precautions?**

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

## **Harris Hill Manor (Big Flats Water District #4)** Public Water Supply ID# 0701005

To comply with State regulations, the Town of Big Flats is issuing its annual report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year your tap water met all State drinking water health standards. We are proud to report that our system has never violated a maximum contaminant level or any other water quality standard. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards. If you have any questions about this report or concerning your drinking water, please contact John Dufresne, Water Systems Supervisor at 607-562-8443, extension 212. Please feel free to attend our Water Board meetings. They are held the 4<sup>th</sup> Wednesday of the month at 7pm at the Town Hall.

## **Where does our water come from?**

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Our water source is a 107-foot deep well. We maintain the proper level of disinfection against microbial contaminants as determined by our chlorine residual sample results that fall within the acceptable range of 0.31 mg/L to 0.59 mg/L. Our water system serves about 200 people through 77 service connections. During 2011, our system did not experience any restriction of our water source.

## **Are there contaminants in our drinking water?**

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Chemung County Health Department at 737-2019.

**Contaminants Detected in 2011 (or most recent test)**

**District 4 Well**

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL (AL)	Likely Source of Contamination
Gross Alpha Activity	N	2/10	1.8	pCi/L	0	15	Naturally occurring.
Barium	N	5/09	0.07	mg/L	2	2	Erosion of natural deposits.
Nitrate	N	1/11	0.58	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage
Radium, total	N	2/10	1	PCi/L	0	5	Naturally occurring.

**Distribution System**

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL (AL)	Likely Source of Contamination
Copper 5 samples Note 2	N	6/10	90 <sup>th</sup> Percentile 0.1 Range 0.06–0.1	mg/L	1.3	AL = 1.3	Corrosion of household plumbing
Lead 5 samples Note 2	N	6/10	90 <sup>th</sup> Percentile 2.60 Range 0.5–3.4	ug/L	0	AL = 15	Corrosion of household plumbing
Haloacetic acids	N	8/10	4.6	ug/L	N/A	60	By product of drinking water chlorination needed to kill harmful organisms.
Trihalomethanes	N	8/10	20.8	ug/L	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms.

**Note 2:** The number reported is the 90<sup>th</sup> Percentile. This means that 90 percent of homes tested were less than or equal to the level reported. We conducted one round of testing in 2010. No samples exceeded the action level for lead or copper. We remind you that infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. You can also flush your faucet for 30 seconds to 2 minutes each morning and after long periods of no use to remove corrosion products. Never consume water from a hot water tap. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

**Definitions used in the table:**

**Maximum Contaminant Level (MCL):** Highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Action Level (AL):** Concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

**Milligrams per liter (mg/l):** Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

**Micrograms per liter (ug/l):** Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

**Picocuries per liter (pCi/l):** A measure of radioactivity in water.

**Not Detected (ND):** The contaminant was not detected in the laboratory test.

**Not Applicable (N/A)**

### **What does this information mean?**

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

### **Is our water system meeting other rules that govern operations?**

During 2011, our system exceeded all applicable state requirements

### **Source Water Assessment Program (SWAP)**

The NYS DOH has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. See section "**Are there contaminants in our drinking water?**" for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

As mentioned before, our water is derived from 1 drilled well. The source water assessment has rated this well as having a medium-high susceptibility to microbials. While no significant sources of contamination have been identified in the assessment area, the well draws from an unconfined aquifer with high hydraulic conductivity. Please note that while the source water assessment rates our well as being susceptible to microbials, our water is disinfected to ensure that that the finished water delivered into your home meets the New York State drinking water standards for microbial contamination.

County and state health departments will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs. A copy of the assessment, including a map of the assessment area, can be obtained by contacting us.

### **Do I need to take special precautions?**

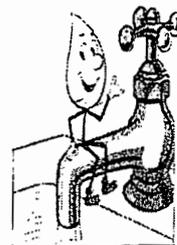
Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

### **How can I help save water?**

Saving water lessens the strain on the water system during a dry spell or drought. You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix the leak and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved you have a leak.

### **Closing**



*Please help us protect our Water System by reporting any suspicious activity to the Police and the Town of Big Flats Water Department.*

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community.

2011  
Water Quality Report

**Exhibit D**

**Annual Drinking Water Quality Report for 2011**  
**VILLAGE OF HORSEHEADS**  
**202 South Main Street**  
**(Public Water Supply ID# NY0701009)**

**Introduction:**

To comply with State and Federal regulations, the Village of Horseheads will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all applicable State drinking water standards. In 2011, we conducted tests for over 100 possible contaminants. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to New York State standards. If you have any questions about this report or concerning your drinking water, please contact Chris Lawrick at 739-5691. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled village board meetings. The meetings are held the second and fourth Thursdays of each month at 7:00 P.M. at Horseheads Village Hall, 202 South Main Street, or you may call the Chemung County Health Department at 737-2019.

**Where does our water come from?**

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Our water source is ground water drawn from two fifty foot deep wells on Mill Street. We also operate a 70 foot deep well on Old Ithaca Road and maintain a nearby backup well. Following the flooding in 2011, the Old Ithaca Road well was re-classified from a ground water source to groundwater under the influence of surface water. Our water is treated prior to distribution with chlorine for disinfection and fluoride to promote healthy teeth and bones.

The NYS DOH has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. See section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future. Water suppliers and county and state health departments will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs.

The source water assessment has rated our wells as having a high to very high susceptibility to microbials, nitrates, industrial solvents, and other industrial contaminants. Well #4 was not in service when the assessments were conducted, but is similar to our other wells. These ratings are due primarily to the close proximity of permitted discharge facilities (industrial/commercial facilities that discharge wastewater into the environment and are regulated by the state and/or federal government) to the wells, and low intensity residential activities in the assessment area. In addition, the wells draw from an unconfined aquifer that yields or pumps greater than 100 gpm and doesn't provide adequate protection from potential contamination. While the source water assessment rates our wells as being susceptible to microbials, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination. A copy of the full assessment can be obtained by contacting us, as noted above.

<b>Susceptibility Ratings: Low (L), Medium(M), High(H), Very High (VH)</b>				
<b>Well Name</b>	<b>Microbials</b>	<b>Nitrates</b>	<b>VOCs</b>	<b>Others</b>
Well # 1,2,4,5	VH	VH	H	VH

**Facts and figures:**

Our water system serves 15,000 people through 3,612 service connections. The total water produced in 2011 was 714 million gallons. The amount of water delivered to customers was 522 million gallons. This leaves an unaccounted for total of 192 million gallons. This water is used to flush mains, test hydrants, fight fires, municipal use, and loss to leakage. The daily average of water pumped into our system is 1.9 million gallons. Our highest single day was 2.9 million gallons. In 2011, water customers were charged an average annual fee of \$154.48 in the Village of Horseheads and \$231.72 outside the Village for 60,000 gallons of water.

**Are there contaminants in our drinking water?**

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds (gasoline and industrial solvents), total trihalomethanes, and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. The state requires that any detected contaminants must be reported for a period of five years.

### Testing:

The Village of Horseheads conducts various tests of your drinking water through out the year. This includes 180 samples (fifteen per month) in various locations through out our system for coliform bacteria. We test residual chlorine levels along with fluoride amounts every day of the year. In addition we test for a variety of possible contaminants at the wellheads, and in the distribution system. This level of testing assures the best possible product for your use. It should be noted that all drinking water, including bottled drinking water, might be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Chemung County Health Department at 737-2019.

Table of Contaminants Detected in 2011 (or latest test)							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit	MCL G	Regulatory Limit (MCL, AL, MRDL, TT)	Likely Source of Contamination
Alpha Emitters	No	14 samples in 2008	Average 1 Range 0.1-3	pCi/L	0	15 MCL	naturally occurs
Arsenic	No	4 samples 2008-2009	Average 0.1 Range ND-0.6	ug/L	N/A	10 MCL	naturally occurs
Asbestos	No	2/28/11 2 samples	Range ND-1.0	MFL	7	7 MCL	erosion of water pipes
Barium	No	10/19/11 2 samples	Average .15 Range .11 to 0.18	mg/L	2	2 MCL	naturally occurs
Chloride	No	10/19/11 3 samples	Average 51 Range 34-73	mg/L	N/A	250 MCL	naturally occurs; use of road salt
Chlorine Residual	No	Year round daily samples	Average .7 Range .25 to 1.4	mg/L	4.0 MRDLG	4.0 MRDL	disinfectant added to control microbial contaminants
Copper	No	7/2011 30 samples	90 <sup>th</sup> = 0.2 Range 0.03 to 0.6	mg/L	1.3	1.3 AL <i>note 1</i>	corrosion of household plumbing
Fluoride	No	Year round daily samples	Average 1 Range .75-1.2	mg/L	N/A	2.2 MCL	added by provider to prevent tooth decay
Lead	No	7/2011 30 samples	90 <sup>th</sup> = 2.7 Range .5 to 4.7	ug/L	0	15 AL <i>note 1</i>	corrosion of household plumbing
Nitrate	No	10/19/11 4 samples	Average 0.8 Range 0.27-1.13	mg/L	10	10 MCL	runoff from fertilizer; leaching from septic tanks, sewers
Radium 226	No	12/2008 4 samples	Average 0.15 Range 0.05-0.2	pCi/L	0	5 MCL <i>Note 2</i>	Erosion of natural deposits.
Radium 228	No	4/2009 11/2009 8 samples	Average 0.8 Range 0.3-1.4	pCi/L			
Sodium	No	10/19/11 2 samples	Average 31 Range 19-42	mg/L	N/A	N/A <i>Note 3</i>	Naturally occurs; Use of road salt
Sulfate	No	10/19/11 2 samples	Average 18 Range 14-22	mg/L	N/A	250 MCL	Naturally occurs
Total Coliform 15 samples each month	No	4/19/2011 1 sample	present	N/A	0	no more than one positive sample each month	Naturally present in the environment.
Total Haloacetic Acids (HAAs)	No	12/2011 1 sample 8/2011	Average 3.4 Range 2.3-4.8	ug/L	N/A	60 MCL	By-product of drinking water chlorination

Table of Contaminants Detected in 2011 (or latest test)							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit	MCL G	Regulatory Limit (MCL, AL, MRDL, TT)	Likely Source of Contamination
2 sample sites		2 samples					
Total Trihalomethanes (THMs) 2 sample sites	No	12/14/11 1 sample 8/2011 2 samples	Average 16 Range 11-19	ug/L	N/A	80 MCL	By-product of drinking water chlorination
Turbidity (Well 5 only)	No	Daily beginning 10/14/11	.29 highest monthly average	NTU	N/A	1.0 TT Note 4	soil runoff

Note 1 – The level presented represents the 90th percentile results of the 30 sites tested. It means 27 of the 30 samples were less than or equal to the level given. No samples exceeded the Action Levels for lead or copper.

Note 2 – The MCL for Radium is the sum of individual measurements of two common isotopes, Radium226 and Radium 228.

Note 3 – An MCL for Sodium is not established. Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

Note 4 – Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. Our highest average monthly turbidity measurement (0.29 NTU) occurred in December 2011.

#### Definitions:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

Not Applicable (N/A)

Picocuries per liter (pCi/L): Picocuries per liter is a measure of the radioactivity in water.

#### Compliance with other sanitary code requirements

We were cited by the Health Department for failing to collect untreated well water samples within 24 hours after the detection of coliform bacteria in a routine customer tap sample collected 4/19/2011. We corrected the violation by collecting the required samples.

The Village conducted precautionary lab testing during and after the September 2011 flooding. Samples collected at Well 5 during the flood period showed the presence of E.coli and traces of algae. These results indicate that Well 5, one of our main water sources, was influenced by nearby Newtown Creek during the flood event. The presence of E.coli in the untreated water was not a violation because our disinfection process meets bacteria and virus removal standards and is continuously monitored. However, because of potential surface water influence, we are required to install a water filtration plant, or develop a new water source, by April 2013.

Due to the change in status of Well 5, we must include the following statement in this report: "Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

#### What does this information mean?

As you can see by the table, our system had no violations. We have also learned through our testing that other contaminants have been detected; however, these contaminants were detected below the level allowed by the State. Additional information can be obtained by calling the safe drinking water hotline at (1-800-426-4791)

### **Do I need to take special precautions?**

Although our drinking water generally met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

The Village of Horseheads water department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>. In addition, the Chemung County Health Department can assist you with lead testing.

### **Information on fluoride addition:**

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. During 2010 monitoring showed fluoride levels in your water were in the optimal range 99% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

### **Why save water and how to avoid wasting it?**

**Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:**

- ☛ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ☛ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ☛ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

**You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:**

- ☛ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ☛ Turn off the tap when brushing your teeth.
- ☛ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6000 gallons per year.
- ☛ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ☛ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved, you have a leak.

### **System improvements:**

In 2011 we completed another comprehensive leak detection program for a portion of our system. The Village continued its installation of MXU radio readers on an additional 800 meters. We also installed an additional 86 service connections.

### **Closing:**

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community and our way of life. Please call our office if you have questions (739-5691). Copies of our test reports may be viewed at the Horseheads Library or the Horseheads Village Hall.